

Base of Productive Zone (BPZ)

Sec: 6 Twp: 2S Rng: 97W Footage at BPZ: 1966 FNL 674 FEL
Measured Depth of BPZ: 12675 True Vertical Depth of BPZ: 12292 FNL/FSL FEL/FWL

Bottom Hole Location (BHL)

Sec: 6 Twp: 2S Rng: 97W Footage at BHL: 1966 FNL 674 FEL
FNL/FSL FEL/FWL

LOCAL GOVERNMENT PERMITTING INFORMATION

County: RIO BLANCO Municipality: N/A

Is the Surface Location of this Well in an area designated as one of State interest and subject to the requirements of § 24-65.1-108 C.R.S.? No

Per § 34-60-106(1)(f)(I)(A) C.R.S., the following questions pertain to the Relevant Local Government approval of the siting of the proposed Oil and Gas Location.

SB 19-181 provides that when "applying for a permit to drill," operators must include proof that they sought a local government siting permit and the disposition of that permit application, or that the local government does not have siting regulations. § 34-60-106(1)(f)(I) (A) C.R.S.

Does the Relevant Local Government regulate the siting of Oil and Gas Locations, with respect to this Location? [X] Yes [] No

[X] If yes, in checking this box, I hereby certify that an application has been filed with the local government with jurisdiction to approve the siting of the proposed oil and gas location.

The disposition of the application filed with the Relevant Local Government is: Approved Date of Final Disposition: 07/07/2022

Comments:

SURFACE AND MINERAL OWNERSHIP AT WELL'S OIL & GAS LOCATION

Surface Owner of the land at this Well's Oil and Gas Location: [] Fee [] State [X] Federal [] Indian

Mineral Owner beneath this Well's Oil and Gas Location: [] Fee [] State [X] Federal [] Indian

Surface Owner Protection Bond (if applicable): Surety ID Number (if applicable):

MINERALS DEVELOPED BY WELL

The ownership of all the minerals that will be developed by this Well is (check all that apply):

- [] Fee
- [] State
- [X] Federal
- [] Indian
- [] N/A

LEASE INFORMATION

Using standard QtrQtr, Section, Township, Range format describe one entire mineral lease as follows:

* If this Well is within a unit, describe a lease that will be developed by the Well.
* If this Well is not subject to a unit, describe the lease that will be produced by the Well.
(Attach a Lease Map or Lease Description or Lease if necessary.)

Total Acres in Described Lease: Described Mineral Lease is: [] Fee [] State [X] Federal [] Indian

Federal or State Lease # COC62046

SAFETY SETBACK INFORMATION

Distance from Well to nearest:

Building: 5280 Feet
Building Unit: 5280 Feet
Public Road: 273 Feet
Above Ground Utility: 542 Feet
Railroad: 5280 Feet
Property Line: 4451 Feet

INSTRUCTIONS:

- Specify all distances per Rule 308.b.(1).
- Enter 5280 for distance greater than 1 mile.
- Building - nearest building of any type. If nearest Building is a Building Unit, enter same distance for both.
- Building Unit – as defined in 100 Series Rules.

OBJECTIVE FORMATIONS

Objective Formation(s)	Formation Code	Spacing Order Number(s)	Unit Acreage Assigned to Well	Unit Configuration (N/2, SE/4, etc.)
WILLIAMS FORK	WMFK	1-229		

Federal or State Unit Name (if appl): _____

Unit Number: _____

SUBSURFACE MINERAL SETBACKS

Enter 5280 for distance greater than 1 mile.

Is this Well within a unit? Yes

If YES:

Enter the minimum distance from the Completed Zone of this Well to the Unit Boundary: 674 Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well within the same unit permitted or completed in the same formation: 354 Feet

If NO:

Enter the minimum distance from the Completed Zone of this Well to the Lease Line of the described lease: _____ Feet

Enter the minimum distance from the Completed Zone of this Well to the Completed Zone of an offset Well producing from the same lease and permitted or completed in the same formation: _____ Feet

Exception Location

If this Well requires the approval of a Rule 401.c Exception Location, enter the Rule or spacing order number and attach the Exception Location Request and Waivers. _____

SPACING & FORMATIONS COMMENTS

DRILLING PROGRAM

Proposed Total Measured Depth: 12675 Feet

TVD at Proposed Total Measured Depth 12292 Feet

Distance from the proposed wellbore to nearest existing or proposed wellbore belonging to another operator, including plugged wells:

Enter distance if less than or equal to 1,500 feet: _____ Feet No well belonging to another operator within 1,500 feet

Will a closed-loop drilling system be used? Yes

Is H₂S gas reasonably expected to be encountered during drilling operations at concentrations greater than or equal to 100 ppm? No If yes, attach an H₂S Drilling Plan unless a plan was already submitted with the Form 2A per Rule 304.c.(10).

Will there be hydraulic fracture treatment at a depth less than 2,000 feet in this well? No

Will salt sections be encountered during drilling? No

Will salt based (>15,000 ppm Cl) drilling fluids be used? No

Will oil based drilling fluids be used? No

BOP Equipment Type: Annular Preventor Double Ram Rotating Head None

Beneficial reuse or land application plan submitted? No

Reuse Facility ID: _____ or Document Number: _____



CASING PROGRAM

Casing Type	Size of Hole	Size of Casing	Grade	Wt/Ft	Csg/Liner Top	Setting Depth	Sacks Cmt	Cmt Btm	Cmt Top
CONDUCTOR	30	20	X65	78.67	0	80	200	80	0
SURF	17+1/2	13+3/8	J55	54.5	0	1240	414	1268	0
1ST	12+1/4	9+5/8	J55	36.0	0	2940	158	3061	2034
2ND	8+3/4	4+1/2	P110	11.6	0	12292	992	12675	7137

Conductor Casing is NOT planned

POTENTIAL FLOW AND CONFINING FORMATIONS

Zone Type	Formation /Hazard	Top M.D.	Top T.V.D.	Bottom M.D.	Bottom T.V.D.	TDS (mg/L)	Data Source	Comment
Groundwater	UINTA	30	30	653	650	501-1000	Produced Water Sample	
Groundwater	GREEN RIVER	653	650	807	800	501-1000	Produced Water Sample	
Subsurface Hazard	A GROOVE	807	800	1014	1000			
Subsurface Hazard	B GROOVE	1014	1000	1331	1300			
Subsurface Hazard	DISSOLUTION SURFACE	1331	1300	2281	2200			POTENTIAL LOSS ZONE
Confining Layer	GARDEN GULCH	2281	2200	2449	2360			
Confining Layer	ORANGE MARKER	2449	2360	2534	2440			
Hydrocarbon	UPPER WASATCH	2534	2400	5288	5050			
Hydrocarbon	TOP OF G SAND	5288	5050	5562	5310			POTENTIAL LOSS ZONE
Confining Layer	FORT UNION	5562	5310	6396	6100			
Hydrocarbon	LOWER WASATCH	6396	6100	7337	6992			
Hydrocarbon	OHIO CREEK	7337	6992	8089	7712			POTENTIAL LOSS ZONE
Hydrocarbon	UPPER MESAVERDE	8089	7712	8895	8512			
Hydrocarbon	TOP GAS	8895	8512	10465	10082			
Hydrocarbon	CAMEO COALS	10465	10082	11195	10812			
Hydrocarbon	ROLLINS	11195	10812	11345	10962			
Hydrocarbon	COZZETTE	11345	10962	11670	11287			
Hydrocarbon	CORCORAN	11670	11287	11930	11547			
Hydrocarbon	UPPER SEGO	11930	11547	12175	11792			
Hydrocarbon	LOWER SEGO	12175	11792	12675	12292			

OPERATOR COMMENTS AND SUBMITTAL

Comments: Nearest offset well producing from the same lease and permitted or completed in the same formation: Federal RGU 542-6-297 (Doc #403559138).

OGDP application (Docket# 221200375) was approved on 08/23/2023, Form 2A (Doc# 402932511) approved on 09/11/2023.

This application is in a Comprehensive Area Plan _____ CAP #: _____

Oil and Gas Development Plan Name Ryan Gulch Phase 3 OGDP ID#: 484436

Location ID: 335602

I hereby certify all statements made in this form are, to the best of my knowledge, true, correct, and complete.

Signed: _____ Print Name: Melissa Luke

Title: Regulatory Specialist Date: 12/20/2023 Email: mluke@terraep.com

Based on the information provided herein, this Application for Permit-to-Drill complies with COGCC Rules, applicable orders, and SB 19-181 and is hereby approved.

COGCC Approved: _____ Director of COGCC Date: _____

Expiration Date: _____

API NUMBER

05

Conditions Of Approval

All representations, stipulations and conditions of approval stated in the Form 2A for this location shall constitute representations, stipulations and conditions of approval for this Form 2 Permit-to-Drill and are enforceable to the same extent as all other representations, stipulations and conditions of approval stated in this Permit-to-Drill.

COA Type Description

<u>COA Type</u>	<u>Description</u>
0 COA	

Best Management Practices

No BMP/COA Type Description

<u>No BMP/COA Type</u>	<u>Description</u>
1 Drilling/Completion Operations	Alternative Logging Program: One of the first wells drilled on this pad will be logged with an open-hole resistivity log with gamma-ray, from TD into the surface casing. All wells on the pad will have a cement bond log (CBL) with gamma-ray run on production casing (or on intermediate casing if production liner is run) into the surface casing. The Form 5, Completion Report, for each well on the pad will list all logs run and have those logs attached. The Form 5 for a well without open-hole logs will state "Alternative Logging Program - No open-hole logs were run" and will clearly identify the type of log and the well (by API#) in which open-hole logs were run.

Total: 1 comment(s)

Attachment List

Att Doc Num Name

<u>Att Doc Num</u>	<u>Name</u>
403566063	OffsetWellEvaluations Data
403573972	DIRECTIONAL DATA
403573975	DRILLING PLAN
403573977	WELL LOCATION PLAT
403631546	LEASE MAP

Total Attach: 5 Files

General Comments

User Group Comment

Comment Date

		Stamp Upon Approval
--	--	------------------------

Total: 0 comment(s)

